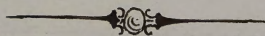


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ESSAY on



THE SOURCE OF LIFE.

AND

CAUSE OF DEATH.

RESPECTFULLY SUBMITTED TO THE FACULTY
OF THE

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BY

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Animus est, quo sapimus, anima, qua vivimus—
Thus said Cicero, that greatest of Roman orators
and writers; and thus, like a parrot, I repeat
it. To thread the intricate mazes of metaphys-
ical, or theoretical reasoning, on the portentous
subject above; would be to lose myself in
a labyrinth, compared with which, the Cretan
maze would be a garden-walk in simplicity.
I propose no such thing; I merely mean to think,
and wonder, and, perhaps, with boyish egotism,
divine some reason for, at least, the simplest
of the mysterious workings of Nature.

Why should I not write thus — at first I shrank
back, as tho' with sacrilegious hand, I had
been about to cast down the cherished image
of some patron saint — I remembered, that
"things that are hidden belong to God; those
revealed, to us and our children." Yet, how
know we that that wonderful essence, that

God-born principle, the cause of life, is hidden? May it not be waiting to be found? May not the man now live, to whom the mystery will be revealed; either by accident; or, as the result of patient and unremitting study? While seated beneath the tree of knowledge, the fruit may drop, and the new-born law flash before his dazzled eyes; even as the falling apple revealed to the great Newton, the unknown law of gravitation. Was the persecution of Galileo and Columbus, and, to fill out the trio, of our own immortal Hahnemann, so slight, and is it of so remote a date, as to have been forgotten? The time was, when to aspire to a knowledge of the laws by which the stars are governed, and held in their courses; or, to declare the existence of a western continent, was almost blasphemy in the minds of men: but now

the times are changed - "Progress rules the hour".
When we enter the house of God; the uncovered
head and quiet step, show our veneration;
when we look upon ^{the} dead, encased form
of recent life; the silent awe, marks our
respect for the dead - so let us enter the
holy precincts of that law, which holds in
its grasp, life and death; which is the
source of the one, and the cause of the other;
which gives us breath, and takes it again in
due time - to my taste, we shall be in a
much more august presence, than we should
have been, had we visited "Typhoid fever",
or "Small doses", or any other theme, so harassed
by frequent calls; so drawn on by oft-repeated
demands, as to have small store of hospitality
left for us. The best way, when about to take
a bath, is not to stand shivering upon the
shore, dreading the first shock; but to plunge

in at once, and soon you will feel, if not exactly in your element, still quite at home, and many aye, if not vie with the fishes.

So I will dash into the flood, and send up a prayer, that I may not sink.

What is life? Bichat says, "The totality of those functions which resist death"; truly a beautiful and very proper definition of the word life; but had he told us how this "totality" of functions resist death; by what force or agent they are enabled to act on the aggressive; in what way they act, &c., &c., why - what then? He would have told the whole story, and left nothing for the embryonic philosophers of future ages!

I venture to say that, when the tearful parents of the first murderer, stood around their second son - the victim of the first; in the midst of this sorrow, they were impressed

by the thought, that, death differed from life,
not so much on account of the presence of
something, as the absence; the form was Abell's,
there was wanting but that, which Quin
had taken, and that was what! From the
earliest antiquity, thinkers have observed,
that, the greater number of phenomena
which characterize the living body, are wanting
in the dead inorganic mass. One particular
cause has been assigned to explain the
phenomena observed in living bodies. Hippoc-
rates, called it "Pneus"; Boerhaave, named it,
"Impetum faciens"; Stahl called it "Soul"; from
others it has received the names of "Vis insita",
"Vis vitae", &c.; and we may add to the list,
"Fores vitale", and the "Fruen", or anima mundi,
or "living spirit", which the ancients thought
"Ire per omnes terras tractoque maris eorumque
profundum"; to say nothing of the "Sopos" and

"Nors" of the Greeks, and the "Animus" of the
Latins; all of which, among their numerous
interpretations, admit of the common one
of "the unknown cause of life". Some one has
said, that, he who has learned to say, "I
do not know", has taken the first step
toward discovering the truth. So I will even
say, I do not know what meaning to give
to all these words or names; and, perhaps,
I have taken the first step toward discovery.
Magendie says, speaking of these same names,
applied to the unknown cause of vital
phenomena, thus: "What signifies all these
expressions? They must have one of two mean-
ings; either that of entities, to which belong
the power of producing vital phenomena;
but in supposing this, do we not resemble
savages, who, after having rudely sculptured
a stone, call it a God? Or we must assert

that those words "Force vitale, designate the unknown and perhaps incomprehensible cause or causes of vital phenomena". 'Tis useless to try to penetrate that thicket, which, even the most expert woodsman avoids. Such are the narrow limits of the human understanding, that the knowledge of first causes, is almost always denied to it; the thick veil which covers them, envelops in its innumerable folds, whoever attempts to rend it asunder. In the study of Nature, principles, are certain general results from first causes, from which are innumerable secondary results: the art of finding out the first from the second, belongs to the most judicious. To search for the connexion of first causes, with their general results or effects, is blindly to pursue a road where a thousand by-ways lead us into error. Life, then is but a struggle between external

forces and some unknown inward power,
what that is - far be it from me, even to
attempt to say! Great minds have stranded
on that rock, and it so plainly says "Avoid
ye", that I gladly pass it by.

Life is measured by the difference which
exists between the efforts of the external forces,
and of the internal resistance; the excess of the
former, announces its weakness; the predom-
inance of the latter, is an indication of
strength: "Water dropping day by day, will wear
the hardest rock away"; the defenders within
the citadel, weakened, at last, by repeated
attacks from the besieging force; yield, lay
down their arms, and march out; leaving
the proud structure to be destroyed by its
captors. Let us now leave this part of the
subject, and certainly "will be without regret!
Perhaps I ought here to offer some apology, for

entering upon the discussion of a question upon which I can scarcely hope to throw any new light; but "a dog may bay at the moon". I shall endeavor to avoid prolixity, and in this I expect no great difficulty; for, as has been often observed: whatever is valuable in science and philosophy, is in its nature lucid and intelligible; it is owing to the pedantry or needless obscurity of learned but unskilful writers; that so many things, themselves plain, have been buried beneath a jargon of metaphysical and technical phraseology.

"What is the source of life? Rough and unshapely, as a block of marble, just quarried, soon to feel the inspiring touch of the sculptor's chisel; lay the earth beneath its Maker's hand; and "Darkness was upon the face of the deep".

What a sublime and God-like command was that, which issued from the lips of the

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Divine architect, "Let there be light"! and
light and light there was. No useless words-
no pomp - no passion! He wanted light,
and called it: and when all was ready, may
he not have called life in the same way?
Let there be life! and life there was.
The waters sunk back into their places and
the dry land appeared - now see the
face of Nature smile - verdant fields and
forest trees - a "Garden east in Eden". The
seas teemed with their finny tribes, and
beasts, the earth did roam; while the first
paeon of thanks went up to God, from "The
fores of the air" - this was life! To crown his
work, to till the land, and reign o'er all
supreme, he made man: what kind of
life was his? Differed it from the life around
him in aught but its perfection? No! A
common Nature may be said to have

united him to even the lichens and mushrooms at his feet. To exist in successive generations, which one after another, rise, flourish and decay; to begin from ova or seeds; to grow to a definite extent by means of the accretion of particles from the surrounding elements, imbibed by peculiar organs; to assume a particular form; to exist in perfection a definite space of time; and then, after giving origin to new germs and rudiments, destined according to certain laws to secure the preservation of each tribe, to fall at length a prey to the dissolving powers of the external elements; are properties common to all organized beings; common alike to the "Lords of creation", and to the pot-herbs which contribute to his daily food. God made man in his own image and likeness, or, in other words, he gave him a soul.

"The Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life, and he became a living soul". This language seems to convey the impression that, that spiritual essence which we call "Soul"; that which is the great point of difference between man and other animals, was infused into our first parent, at that moment, when first he felt the presence of that life which already breathed around him in its myriad forms - Yes, his spiritual, as well as his material nature, breathed, and inhaled a soul! Man was the finishing stroke; a "Chef d'oeuvre"; the Key-stone of that grandly beautiful work of Nature just erected. We have no account that should lead us to suppose, that the supreme being was as immediately and personally active in any

other case as in that of man: life already
existed - he commanded its presence, and in
all the varied forms of Nature, it breathed
around him; now he wished to set a king
over all, and he crowns him - breathes into
him a living soul, what a crown! how full
of precious jewels! It is not the place here
to discuss the question of a separate and
independant nature; indwelling and ruling
over the coarser and more material one;
which nature, we might consider as purely
a mental essence, not affected by death.
Had I the will; I have not the ability, to
enter upon a discussion regarding the soul,
so called; its existence, nature or end: the
existence of this principle, its nature and
modes of operation, have been long looked
upon as matters to be discussed by divines
and philosophers. In general, the theories

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of physiological writers, respecting the principle
of human life, which they supposed to preside
over the growth and development of the body,
have been so fluctuating and announced in
terms so obscure, that it is difficult to deter-
mine whether this principle was to be received
among merely physical and material agents,
or among immaterial beings. My object in
taking this view of the case; in mentioning
the soul at all, is to show - if I can! - that
the "Vital force"; and we must perforce,
admit its existence, is not the same in being,
object, or end, as the soul; altho' most, if not
all, of the expressions, used in this connection,
by the ancients, are capable of receiving both
interpretations. Now for the simple, but
plain argument! That moment that the
first blade of grass sprang into existence,
at the command of its Maker, "Vital force"

was born; soon the commands issuing from
their Divine source, stocked the earth, the seas
and air, and "Vital force" pervaded all anima-
ted Nature: and to this day, has it been
perpetuated; each genus of plants, birds,
beasts and creeping things, distinct in itself,
however insignificant, has been continued,
and the last chapter still remains to be
written. By means of ova or seeds, germs
or rudiments of some kind; this "Vital force"
has been perpetuated; the various tribes,
classes or races; ever with the most rigid
exactness; as wonderful as the first creation,
preserving the type of each. And why should
this not be? why not attribute to God,
the power to conceive and execute a plan,
by means of which, life, as portrayed in the
various classes in the scale of Nature, should
not only exist, but have within itself the

power to continue to exist! Why not be content
to call him the source of life; and the
force by which 'tis perpetuated, the same as
that by which 'twas brought into existence.
Of course! no one doubts this - they say, we
know this before, but would know more;
we would know how this is done; we know
that certain things are thus and so, but
would know why they are thus and so;
we would know what the mysterious differ-
ence between organic and inorganic matter
is; why the one is born and the other,
not; we would know what that "force of
life" is, which controls the ordinary forces of
matter; we would know why a particular
organization presupposes life; and why it is
that every living being must spring from
an egg or seed. 'Tis useless for man to aspire
to the acquisition of such knowledge as this!

Is it to be supposed, that he could comprehend and digest the stupendous workings of a divine intellect? Would not his comparatively feeble brain quiver, and his reason totter and fall from its throne, before the mighty thoughts he had so perversely summoned? We must be content with what God is willing that we should know; that is, that we live; having become in turn the recipients of the "Force of life", from our immediate parents, by means of "Ova or seeds"; for a time, new particles are deposited internally; our bulk is augmented, and our external envelope distended; maturity, or full development is attained; in due course of time, the resistance made by our internal resources against external aggression becomes weaker and weaker; after this, decay commences; the functions are exerted with gradually diminishing energy; the

fluids decrease in quantity; the solids become more rigid - circumstances premonitory of the cessation of vitality - and finally, the "Force of life" dies. We may have assisted in fulfilling the law "Increase and multiply", or we may have neglected it; however that may be, the race is in no danger of becoming extinct; so we, having fulfilled, at least, our "journey in the flesh", "Shuffle off this mortal coil", and with it, our share of "Vital force" - further than that, "I do not know".

To close this part of my "Attempt", I will employ the language of Dr. Barclay; who says, "All that we seem to know regarding the vital force or principle is, that all the organisms of animals and plants are formed out of fluids, and that, a certain species of fluid, secreted from the parent, and afterwards enclosed in a very thin and transparent vesicle, contains a living

organizing principle, which also acts upon the fluids in a way which we know not, forming out of it a regularly organized system of solids and forming not only the rudiments of that system, but causing it afterwards to be nourished, and to grow, through the medium of fluids, which are moved and distributed under the influence of this organizing unisecating principle.

Having thus, with more imperfection than brevity answered, or tried to answer the two questions which naturally presented themselves in the digestion of the first part of my subject, viz, what is life? and what, its source: I now come, with trembling hands, to take up the remaining portion. "The cause of death." I will first ask myself what is death? On consulting that great Lexicographer, Webster, I find this definition "The extinction of life": then, until we have learned the nature of life.

which seems far beyond our comprehension in
 our present state of knowledge, it is obviously
 impracticable ^{ca-} to understand the phenomena that
 arise from its gradual declension and extinction.
 On looking at the "Parasos" and "Mortuus", of the
 ancients, I find these; among the different
 meanings ascribed to those words; "Passed away,"
 "Gone out"; "Gone with", &c.; all potent and very
 expressive phrases; still, however, well we may
 understand them, there will a shadowy some-
 thing remain behind; mysterious in its nature,
 that will not be understood, will not
 present itself in a tangible form, - why is this?
 Is it because we naturally shrink from a
 too close investigation of what we dread?
 Is it because we take that for granted, which,
 under other circumstances we would stop to
 investigate? Is it the same feeling that prompts
 us to examine a hideous and deadly reptile

from a distance rather than take it in our hands: Who would not prefer taking it for granted that the rattlesnake has fangs, rather than take it up for a close examination!

Dunglison says, speaking of death, "In the beautiful mythology of the ancients, Death was the daughter of Night, and the sister of Sleep. She was the only divinity to whom no sacrifice was made, because it was felt that no human interference could arrest her aim; yet her approach was contemplated without any physical apprehension. The representation of Death as a skeleton covered merely with skin, on the monument at Geneva, was not the common allegorical picture of the period. It was generally depicted on tombs as a friendly genius, holding a wreath in his hand, with an inverted torch, — a sleeping child, veiled with an inverted torch resting on his wreath,

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or as Love, with a melancholy air, his legs
crossed, leaning on an inverted torch, — itself
a beautiful emblem of the gradual self-ex-
tinction of the vital flame". In yonder muffled
chamber, the very air of which is pregnant
with dying groans, lies a man struggling with
death; young and, a short time since, strong
and full of life and energy; but now the
cold hand of Death is laid upon him, and
its imprint is upon his brow; his struggles
cease — he has "Gone out": standing by him,
a candle burns with flickering light, and
with its red eye, weeps drops of wax, until
its substance gone, and nothing left to feed
upon, it also dies — "Gone out"! Is there analogy
here? No! had some rude blast extinguished
the flame, when strong and clear it burned
with steady light; or had the dying man
been old and withered; his senses dulled; his

"three score years and ten" fulfilled, in either case the analogy would have been complete. We may then divide death into two kinds; natural and accidental, or perhaps I should rather say, it comes upon us in two ways; naturally and accidentally.

In the words of Magendie, "The individual existence of all organized beings is temporary; no animal escapes the hard necessity of dying; nor is man exempt from this."

The particular history of each function, shows that in the first periods of old age, and often before; the organs become deteriorated; that many completely cease to act; that others are absorbed and disappear; and lastly, that in decrepitude, life is reduced to a few miserable remnants of the vital and some of the nutritive functions in an imperfect state. These lucid and beautiful

words of the great physiologist; when first
 they passed beneath my eyes: gave rise to
 thoughts, productive of wonder and awe. It is
 when occupied with thoughts such as these, that
 the infidel feels his platform passing from beneath
 his feet, and his desperate wickedness staring
 him in the face. Such thoughts are often engendered
 by the study of the stars, or in the midst of
 some fearful convulsion of Nature, — some tetanic
 spasm, when, in her mighty throes, the sublimity
 of the Maker so proudly overshadows the insigni-
 ficance of the made. I could but wonder at
 the incomprehensible wisdom and power of a
 being, who could originate and construct such a
 beautiful, complicated piece of mechanism
 as man; and so provide, and guard against
 contingencies, that part after part, section after
 section, may weaken, break, and pass away,
 and still, the machine run on. See yonder

gray-haired man: who, like "Barzillai," is this
day "Fifty years old", can he "Discern between
good and evil"? Can he "Taste what he eats, or
what he drinks"? Can he "Hear any more the
voice of singing men or singing women"? Sans
eyes, sans teeth, sans hearing, smell and taste
nearly obliterated, still the hands point to
the hour; still the pendulum swings, still
do we hear the regular tick, that tells of
action! Has man ever constructed a piece of
mechanism, a clock, or work of any kind,
in which, if one little wheel or spring, should
fail the rest, should cease to act, the whole
was not affected? But why do I run on thus?
"With God all things are possible"! Still, man
may wonder and admire!

I will now briefly consider the last question
that presents itself to my notice: and though
the most important of all, still we know

literally nothing concerning it: and I have been so prodigal of my words and time that I have little of either to bestow upon it.

There are certain physical circumstances or changes, that may give rise to the final cessation of the vital phenomena; but after all, the difficulty remains, — and it is insoluble, — to explain the cause why these changes themselves occur in the organs essential to vitality. We walk out upon the face of Nature, and gaze at the simplest of her unnumbered acts: we see this done, and know not why; that, undone, and cannot tell wherefore — here a blade of grass — a tiny shoot, is rapidly expanding, under the genial influence of the Sun and air. What man; what naturalist; what philosopher; would undertake to tell us how that simple increase of bulk is accomplished? He could tell us that, in the air, there exists something called "Carbonic acid".

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that, that blade of grass has the power of decom-
posing this "Carbonic acid", and, while it retains
an element called "Carbon", it rejects another
called "Oxygen"; he could tell us that the
presence of light is necessary to this operation,
but further than this, he could not tell: that
it is done he would tell us, but the manner
of its execution, he is ignorant of.

Let us consider for a moment some of the ways
in which men die. But a small number
of persons die solely of old age: it scarcely
happens to one in a million; the remainder
die at every period of life, from causes apparently
accidental; and this great destruction of human
life, appears to be provided for by Nature, with
as much care, as she takes to secure the repro-
duction of the species. A curious problem indeed
it would be, by means of which, we could
ascertain how long it would take to destroy the

human race, by suffering every one that is born into the world to die of old age! how strange is the thought! and yet how pregnant with truth! soon would the space now desolate, teem with life: soon would famine and grim-visaged war stalk over the over-burthened earth! but the thought is too large for my small grasp, my feeble hands cannot retain it, and it is gone.

I will not stop to divide death into the two kinds, sometimes adopted, viz, animal and organic: that is Bichats theory. He thought that death from natural causes, - where it takes place in detail, - was the cessation of those animal functions, which connect the man with the objects around him, long before the annihilation of those functions concerned in his nutrition. He thought, in other words, that death took place (in old age) from the circumference, towards the centre whilst

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in accidental or premature death, the annihilation
of the functions begins in the centre and extends
to the circumference. He says, "As vitality grad-
ually recedes in the aged, from the exterior, one
of the great centres of vitality, brain, heart, or
lungs - stop for an instant; the powers are
insufficient to restore the action, and total
death necessarily ensues". It is not common
however for death to occur in this quiet and
gradual manner, man is liable to numer-
ous diseases, from the earliest period of his
existence, to his latest hour; many of which,
are of a fatal character. "It was admitted by
Sydenham", says Denham: "whose estimate
cannot be regarded as more than an approx-
imation, that two-thirds of mankind die
of acute diseases; and that of the remaining
one-third, two-thirds, or two-ninths of the whole,
die of consumption, leaving consequently, only

one-ninth to die other^{from} chronic maladies, and from pure old age. How small, then, must be the number of those, who expire from decrepitude simply! "small indeed!"

"Secundum naturam", then, death is the inevitable "Sequitur" of life; he who enjoys the one must suffer the other; either ignorantly or wittingly he transgresses the laws of Nature, and pays the penalty; or some accident befalls him, some violence, or the breath of some contagion surrounds him, or, perchance, he lives to suffer the living death of decrepitude. When we reflect upon how few, how very few, proportionally, die from old age, and consequently, how great a proportion, from accidental causes, which render their death premature, and when we remember, how great a proportion of these causes, are diseases, that may be combated, and often defeated, by the skill and knowledge of the physician, how great is the inducement to study! how wide the field for philanthropic action!